What is claimed is:

1. A valve unit comprising:

a chamber having an inlet and an outlet for a fluid; and

a valve element accommodated in said chamber,

wherein an inclined portion is provided at said outlet, and

when said chamber is subjected to vibration in a state in which said valve element is located at said inclined portion due to fluid pressure within said chamber and closes said outlet, said valve element moves with respect to said inclined portion, and said outlet is opened.

2. The valve unit according to claim 1, wherein said outlet is opened as said valve element slides on said inclined portion when said chamber is subjected to vibration.

3. The valve unit according to claim 1, wherein said outlet is opened as said valve element is sprung up from said inclined portion when said chamber is subjected to vibration.

4. The valve unit according to claim 1, wherein the shape of one end of said valve element has any one of wedge-shaped, spherical, and conical forms.

5. The valve unit according to claim 1,

wherein the shape of each of both ends of said valve element has any one of wedge-shaped, spherical, and conical forms,

an inclined portions which are brought into contact with said valve element are formed at said inlet and said outlet of said chamber.

6. The valve unit according to claim 1,

wherein the shape of said valve element is spherical, and

an angle made by said inclined portion formed on an inlet side of said chamber is smaller than an angle made by said inclined portion formed on an outlet side of said chamber.

7. The valve unit according to claim 1,

wherein the shape of each end of said valve element has one of wedge-shaped and conical forms, and an apex angle of an input-side end of said valve element is smaller than that of an output-side end thereof, and

an angle made by an inclined portion formed on an inlet side of said chamber is smaller than an angle made by said inclined portion formed on an outlet side of said chamber.

8. The valve unit according to claim 1, further comprising:

a valve-element urging means for urging said valve element

toward said outlet of said chamber.

9. The valve unit according to claim 8, wherein either one of said valve-element urging means and said valve element is formed of a magnetic material and is attracted by a magnetic force of another one thereof.

10. The valve unit according to claim 8, wherein said valve-element urging means is one of an urging spring and a resilient projecting piece.

11. The valve unit according to claim 1, wherein the flow of the fluid from said outlet is formed into a continuous flow and/or an intermittent flow by a variation of the vibration.

12. The valve unit according to claim 1, wherein a flow rate of the fluid from said outlet is changed by vibrating said chamber by varying a frequency in a predetermined frequency range for moving said valve element.

13. The valve unit according to claim 12, wherein said outlet is closed by stopping the vibration of said chamber or vibrating with a frequency outside the predetermined frequency range.

14. The valve unit according to claim 1, wherein a flow

rate of the fluid from said outlet is changed by varying an amplitude in a predetermined amplitude range capable of moving said valve element and by vibrating said chamber.

15. The valve unit according to claim 14, herein said outlet is closed by stopping the vibration of said chamber or vibrating with an amplitude outside the predetermined amplitude range.

16. The valve unit according to claim 1, wherein the movement of said valve element is promoted by vibrating said chamber with a frequency higher than that of a main vibration in the frequency range or by vibrating said chamber with an amplitude higher than that of the main vibration in the amplitude range during a predetermined period before and after the opening of said outlet by said valve element.

17. The valve unit according to claim 1, wherein contact friction between said valve element and an inner wall of said chamber is reduced by imparting a vibration having a predetermined frequency and amplitude during a predetermined period before and after the opening of said outlet by said valve element.

18. The valve unit according to claim 1, wherein contact friction between said valve element and an inner wall of said chamber is reduced by imparting a vibration having a

predetermined frequency and amplitude to said chamber during a predetermined period before and after the closing of said outlet by said valve element.

19. A valve unit comprising:

a chamber having an inlet and an outlet for a fluid;

a valve element accommodated in said chamber, and

a detection means for measuring a transit time of the fluid between two points in a channel including said chamber and leading to said inlet and said outlet.

20. The valve unit according to claim 19, wherein said detection means is disposed at a position upstream of said inlet of said chamber.

21. The valve unit according to claim 19, wherein one of a flow velocity and physical properties of the fluid are specified by said detecting means.

22. The valve unit according to claim 19, wherein said detection means is detachable.

23. A valve unit comprising:

a chamber having an inlet and an outlet for a fluid; and

a valve element accommodated in said chamber,

wherein one of the opening/closing state of said outlet and an opening level thereof is varied as a frequency and/or an amplitude of a vibration applied to said chamber is varied, and an amplitude of said valve element is varied by the varied vibration.

24. The valve unit according to claim 23, further comprising: a valve-element urging means for urging said valve element toward said outlet of said chamber.

25. The valve unit according to claim 23, wherein either one of said valve-element urging means and said valve element is formed of a magnetic material and is attracted by a magnetic force of another one thereof.

26. A valve unit comprising:

a chamber having an inlet and an outlet for a fluid;

a valve element accommodated in said chamber; and

an exciting means for vibrating said chamber,

wherein an inclined portion is provided at said outlet, and said outlet is opened as said valve element moves with respect to said inclined portion when said chamber is subjected to vibration in a state in which said valve element is located at said inclined portion due to fluid pressure within said chamber and is moved by vibration by said exciting means.

27. The valve unit according to claim 26, wherein said exciting means vibrates said chamber in a perpendicular direction to a flowing direction of the fluid.

28. The valve unit according to claim 26, wherein said exciting means is detachable with respect to said chamber.

29. The valve unit according to claim 26, wherein said exciting means has a driver for generating a control (vibration) waveform.

30. A valve unit comprising:

a chamber having an inlet and an outlet for a fluid;

a valve element accommodated in said chamber;

and exciting means for vibrating said chamber; and

a driver for driving said exciting means, said valve element being adapted to open and close said outlet of said chamber by vibration by said exciting means,

wherein said exciting means varies one of the opening/closing state of said outlet and an opening level thereof by varying a frequency and/or an amplitude of a vibration applied to said chamber and by varying an amplitude of said valve element by the varied vibration.

31. The valve unit according to claim 30, wherein the flow of the fluid from said outlet is formed into a continuous flow

and/or an intermittent flow by a variation of the vibration.

32. The valve unit according to claim 30, wherein one of said exciting means and said driver is detachable.

33. The valve unit according to claim 30, wherein said exciting means superimposes a vibration having a frequency and an amplitude different from those of the main vibration on the main vibration.

34. The valve unit according to claim 30, wherein said exciting means imparts such a vibration that a gas is released from said outlet and a fluid is not discharged from inside said chamber when the fluid is filled into said chamber.

35. The valve unit according to claim 30, wherein a gas venting portion is provided in a downstream-side channel of said chamber, so that a liquid does not permeate said gas venting portion, and only a gas permeates said gas venting portion and is discharged.

36. The valve unit according to claim 30, further comprising: head-coming-out detecting means for detecting a head portion of the fluid when said chamber is filled with the fluid.

37. The valve unit according to claim 36, wherein said

head-coming-out detecting means is provided at a position downstream of said outlet of said chamber.

38. The valve unit according to claim 36, wherein said head-coming-out detecting means is one of means based on vibration detection and optically detecting means.

39. The valve unit according to claim 36, wherein said head-coming-out detecting means is detachable.

40. The valve unit according to claim 30, further comprising: a state detecting means for detecting a change of state in said chamber when said chamber is filled with the fluid, and one of physical properties and a flow velocity of the fluid is detected from the change of state in said chamber detected by said state detecting means.

41. The valve unit according to claim 40, wherein said state detecting means is one of vibration detecting means for detecting the vibration and optically detecting means.

42. The valve unit according to claim 40, wherein said state detecting means is detachable.

43. The valve unit according to claim 30, wherein said driver has a control portion for controlling a driving waveform

of said exciting means, and said control portion adjusts valve control data on the basis of one of the velocity and the physical properties of the fluid detected by said state detecting means.

44. The valve unit according to claim 30, wherein said chamber is that of a microvalve with the breadth of said chamber being on the order of several micro meters to several hundred micro meters.